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NOTICE OF ALLOWANCE AND FEE(S) DUE

7590

01/13/2009

LAW OFFICES OF RONALD M. ANDERSON
Suite 507
600 - 108th Avenue N.E.
Bellevue, WA 98004

EXAMINER

SHAHRESTANI, NASTIR

ART UNIT

PAPER NUMBER

3737

DATE MAILED: 01/13/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/655,482	09/04/2003	Wei-Chih Wang	UNIV0185	5872

TITLE OF INVENTION: INTEGRATED OPTICAL SCANNING IMAGE ACQUISITION AND DISPLAY

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$755	\$300	\$0	\$1055	04/13/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

7590 01/13/2009

LAW OFFICES OF RONALD M. ANDERSON
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 600 - 108th Avenue N.E.
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Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/655,482 09/04/2003

Wei-Chih Wang

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nonprovisional	YES	\$755	\$300	\$0	\$1055	04/13/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
SHAHRESTANI, NASIR	3737	600-476000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

1

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

2

3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 726 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 726 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability

Application No.

10/655,482

Examiner

NASIR SHAHRESTANI

Applicant(s)

WANG ET AL.

Art Unit

3737

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Appeal Brief filed 05/02/2008.
2. ☒ The allowed claim(s) is/are 1-8, 11-28, 30-36 and 38-58.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date ____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date ____
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other ____.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Sabrina K. MacIntyre on 12/16/2008.

The application has been amended from the claims submitted on 06/25/2007 as follows:

1. Apparatus for display of an image, in regard to a limited region of interest, comprising:

- (a) a light source₂ which emits light;
- (b) ~~a substrate that serves as a support;~~

[[c)] a cantilever comprising a fixed end and a free end, the fixed end remaining fixed to ~~the a~~ substrate₂ and the substrate having a proximal end that serves as a support for the fixed end of the cantilever and having a distal end configured to include a channel, the free end of the cantilever extending freely relative to the substrate, enabling a portion of the free end to bend and deflect within the channel in regard to the limited region of interest, the bending of the cantilever scanning light onto an image plane to create an image, wherein the cantilever is configured as one of:

- (i) a waveguide that conveys light from the light source within the cantilever, when scanning the light onto the image plane to create the image; and
- (ii) a moving carrier for the light source that emits the light, the light source being mounted on the free end of the cantilever and moving when scanning the light emitted by the light source onto the image plane to create the image;

(([d])e) an actuator disposed adjacent to the cantilever and being employed for deflecting the cantilever so as to move the free end to scan in a desired motion;

(([c])d) a photon detector configured to receive light at a location that is proximate to both the free end of the cantilever and to the distal end of the support; and

(([f])e) a position sensor employed for detecting a position of the free end of the cantilever, for producing a signal used in controlling the actuator to cause the cantilever to move in the desired motion.

2. The apparatus of Claim 1, wherein the apparatus ~~has at least two dimensions smaller than three millimeters~~ fits within a volume measuring less than three millimeters in width and height, which are orthogonal to a longitudinal axis of the cantilever.

Claim 10 was canceled.

15. The apparatus of Claim 1, ~~further comprising wherein the cantilever configured as the waveguide further comprises~~ a lens disposed at proximate to the free end of the cantilever through which the light conveyed through the cantilever passes.

20. Apparatus for use either for a far-field image acquisition or for a display of an image, in regard to a limited region of interest comprising a target, wherein the apparatus is configured as a micro-electro-mechanical system (MEMS), the apparatus comprising:

(a) a light source, which emits light;

(b) a substrate that serves as a support, said substrate having a proximal end and a distal end;

(c) a cantilever comprising at least one of a thin film layer and a thick film layer and having a fixed end and a free end, the fixed end remaining fixed proximal to the proximal end of the substrate upon which the cantilever was originally formed and the free end extending freely beyond where the substrate has been removed from supporting the cantilever to define a channel in the substrate, enabling the free end to bend and deflect relative to the channel in the substrate and enabling the free end to bend and deflect relative to the limited region of interest, for scanning with the free end of the cantilever relative to the target;

(d) an actuator disposed adjacent to the cantilever, the actuator being employed for bending and deflecting the cantilever so as to move the free end in a desired motion, to scan at least a portion of the limited region of interest;

(e) a photon detector configured to receive light at a location that is proximate to both the free end of the cantilever and to the distal end of the support; and

(f) a position sensor employed for detecting a position of the free end of the cantilever, for producing a signal used in controlling the actuator to cause the cantilever to move in the desired motion.

21. The apparatus of Claim 20, wherein the apparatus ~~has at least two dimensions smaller fits within a volume measuring less~~ than three millimeters in width and height, which are orthogonal to a longitudinal axis of the cantilever.

Claim 29 was canceled.

34. The apparatus of Claim 20, further comprising a lens disposed ~~at~~ proximate to the free end of the cantilever through which the light ~~conveyed through the cantilever~~ passes.

43. A method for enabling either a far-field image acquisition or a display of an image, in regard to a limited region of interest, using a micro-electro-mechanical system (MEMS), comprising the steps of:

(a) ~~forming providing~~ a cantilever on a substrate, wherein[:]

[[b)] removing a portion of the substrate underlying the cantilever is removed, thereby forming an elongated groove and[:]

[[c)] supporting the cantilever at a fixed end of the cantilever, the fixed end remaining fixed to the substrate, a free end of the cantilever extending freely beyond where the portion of the substrate was removed from supporting the cantilever, enabling the free end to bend and deflect both within the elongated groove and relative to a target in the limited region of interest, for scanning the target;

[[d)]bending and deflecting the cantilever so as to move the free end in a desired motion to scan the target;

[[e)]receiving light at a location that is proximate to the cantilever and to the support; and

[[f)]d) detecting a position of the free end of the cantilever, producing a signal indicative of the position; and for use in

(e) controlling the cantilever to move in the desired motion.

44. The method of Claim 43, wherein the cantilever ~~has at least two dimensions that are smaller~~ is less than one millimeter in length.

The following is an examiner's statement of reasons for allowance:

The prior art of record does not teach, nor fairly suggest an apparatus comprising a cantilever comprising at least one of a thin film layer and a thick film layer and having a fixed end and a free end, the fixed end remaining fixed proximal to the proximal end of the substrate upon which the cantilever was originally formed and the free end extending freely beyond where the substrate has been removed from supporting the cantilever to define a channel the substrate, enabling the free end to bend and deflect relative to the channel in the substrate and enabling the free end to bend and deflect relative to the limited region of interest, for scanning with the free end of the cantilever relative to the target, in combination with the other claimed elements. Furthermore, the prior art of record does not teach a method for using MEMS comprising the steps of supporting the cantilever at a fixed end of the cantilever, the fixed end remaining fixed to the substrate, a free end of the cantilever extending freely beyond where the portion of the substrate was removed from supporting the cantilever, enabling the free end to bend and deflect both within the elongated groove and relative to a target in the limited region of interest, for scanning the target; bending and deflecting the cantilever so as to move the free end in a desired motion to scan the target; receiving light at a location that is proximate to the cantilever and to the support; detecting a position of the free end of the cantilever, producing a signal indicative of the position; and controlling the cantilever to move in the desired motion.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NASIR SHAHRESTANI whose telephone number is (571)270-1031. The examiner can normally be reached on Mon.-Thurs: 7:30-5:00, 2nd Friday: 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric F Winakur/
Primary Examiner, Art Unit 3768

/Nasir Shahrestani/
Examiner, Art Unit 3737

Application/Control Number: 10/655,482
Art Unit: 3737

Page 7